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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,044	08/28/2003	Ikuya Yamashita	101175-00035	6945
4372	7590	09/07/2007		
ARENT FOX LLP 1050 CONNECTICUT AVENUE, N.W. SUITE 400 WASHINGTON, DC 20036			EXAMINER MERKLING, MATTHEW J	
			ART UNIT	PAPER NUMBER
			1764	
			NOTIFICATION DATE	DELIVERY MODE
			09/07/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/650,044	Applicant(s) YAMASHITA ET AL.	
	Examiner Matthew J. Merkling	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 5, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogino (JP 10-139401) in view of Fairlie et al. (WO 00/69773), as evidenced by Walz et al (US 6,083,637).

Regarding claim 1, Ogino discloses a hydrogen supply unit comprising:

a reforming means (30);

a storage means (55/92) for storing and supplying hydrogen gas from said reforming means to fuel cells (100);

said storage means (55/92) comprising a pressurization means (50) in the supply line (17, 18, 21) thereto; and

a purifying means (4) located upstream of the storage means (55/92) also located along the supply line (17, 18, 21).

Ogino fails to disclose a second line, also comprising all of the same elements of the first line so that a portion of the generated hydrogen stream is fed separately to one of the fuel cells (100).

Providing a duplicate line from the reformer (30) of Ogino, which includes the purifying means, pressurization means, and storage means, to one of the fuel cells (100) disclosed would amount to a mere duplication of parts. It has been held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

In addition, Fairlie et al. provides the general teaching of splitting the gas generated in a reformer 10 to various users 16, which include fuel cells, fuel cell vehicles and electrical generators (Abstract) to increase the ability to manage those unit operations for providing an effective and economic hydrogen energy distribution network (P5/L15-25). Therefore, it would have been further obvious to one of ordinary skill in the art at the time the invention was made to provide separate hydrogen feed lines to each fuel cell of Ogino in order to increase the ability to control and manage those individual fuel cells and produce cheaper hydrogen (P5/L25-29).

Furthermore, adding a second hydrogen supply line with purifier, pressurization means and storage means to the apparatus of Ogino downstream of the first purifier is a mere duplication of parts. It is well known in the art that multiple users, as discussed above, can require different purity levels of hydrogen, as evidenced by Walz, which discloses a fuel cell that requires two purifiers in series (see Fig. 1). As such, it would have been obvious to one of ordinary skill in the art to duplicate the purification means, as in Walz, for a user that requires different hydrogen purification levels than other users that pull hydrogen from the same reformer. Moreover, adding another purification means, pressurization means and storage means does not confer patentability absent unexpected results.

Regarding the recitation in claim 1 of intended use of said first and second fuel cells, it is noted that a recitation directed to the manner in which a claimed apparatus is intended to be used does not distinguish the claimed apparatus from the prior art.

Regarding claims 3 and 6, Ogino discloses all of the claim limitations as set forth above. Additionally the reference discloses the unit further comprises:

wherein storage means stores hydrogen by use of a hydrogen absorbing alloy ([0062]- [0070]); and

a remaining amount detecting means (56) for hydrogen gas stored in the storage means and a control means (60).

Regarding limitations recited in claim 5 which are directed to a manner of operating disclosed system, neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP §2114 and 2115. Further, process limitations do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogino (JP 10-139401), Fairlie et al. (WO 00/69773) and Walz et al (US 6,083,637) as applied to claim 3 above, and further in view of Fujitani et al. (US 5,728,483).

Regarding claim 4, Ogino in view of Fairlie et al., discloses all of the claim limitations as set forth above. Additionally Ogino discloses that heat (from heater 95) is required for release of hydrogen from the hydrogen storage alloy, but the reference

does not explicitly disclose that said heat is a waste heat of said reforming means or a waste heat of said first fuel cell.

Fujitani et al. teaches a high-energy efficiency device wherein heat required for release of hydrogen from the hydrogen storage alloy is a waste heat of a fuel cell (Fig. 1 and C2/L30- C3/L64).

It would have been obvious to one having ordinary skill in the art at the time of the invention to use the waste heat of the fuel cell as a source of heat needed to release hydrogen from the hydrogen storage alloy, as taught by Fujitani et 2., in the device of Ogino, for the purpose of improving energy efficiency of the device by using heat that otherwise would be wasted.

Response to Arguments

4. Applicant's arguments filed 6/8/07 have been fully considered but they are not persuasive. Applicant argues that the addition of a second purification means, second pressurization means, and second storage means does not qualify as a duplication of parts. The examiner respectfully disagrees. Adding these means to a hydrogen line either upstream or downstream of a first purification further performs the same function to the hydrogen as the first purification means, first pressurization means and first storage means. As such, the examiner views this instance as a mere duplication of parts.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Merkling whose telephone number is (571) 272-9813. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1764

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



MJM



Glenn Caldarola
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